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## WE CLAIM:

1. A pharmaceutical composition having a parasite with a chorismate synthase gene that is knocked out.
2. An immunogenic composition comprising an attenuated parasite of  
5 claim 1.
3. The parasite of claim 1 is *T. gondii*.
4. An immunogenic composition comprising a cDNA molecule encoding chorismate synthase, said molecule complementary to an mRNA from *T. gondii*.
5. An assay for a candidate inhibitor of *T. gondii*, said assay comprising:  
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  - (a) adding a chorismate synthase - green fluorescent reporter protein DNA construct to a parasite of the *T. gondii* species;
  - (b) contacting the parasite with the candidate inhibitor;
  - (c) comparing the amounts of green fluorescent reporter protein in the parasite in the presence and absence of the candidate  
15 inhibitor; and
  - (d) inferring that the candidate inhibitor is an inhibitor of the parasite if there is significantly less reporter protein when the candidate inhibitor is present.
6. A method for detecting a life cycle stage in a sample tested for *T.*  
20 *gondii* said method comprising:
  - (a) determining an amount of chorismate synthase present in the sample; and
  - (b) comparing the amount to amounts of standards determined from known life cycle stages.
- 25 7. The method of claim 6, wherein the sample is derived from a cat.
8. A recombinant expression system capable of producing chorismate synthase.
9. A polyclonal antibody specific for chorismate synthase from *T. gondii*.
10. A high throughput assay for chorismate synthase, said assay  
30 comprising:
  - (a) detecting the product of a phosphate release assay; and
  - (b) inferring from (a) the quantity of chorismate synthase.

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11. A cDNA having an amino acid sequence shown in FIG. 19.
12. A cDNA molecule having a nucleotide sequence shown in FIG. 18.
13. A genomic DNA molecule having a nucleotide sequence shown in FIG. 21.
- 5 14. A method for detecting the life stage of *T. gondii* in a biological sample, said method comprising:
  - (a) detecting isocitrate lyase with an amino acid sequence capable of being encoded by a cDNA molecule of *T. gondii*.
- 10 15. A DNA molecule having a sequence in accord with a sequence belonging to the group of sequences in GeneBank Assn. Number ASF157612, 157613, 157614, 157615.
- 15 16. A method to inhibit growth of *T. gondii*, said method comprising:
  - (a) selecting an inhibitor of plant plastic acetyl - CoA carboxylase; and
  - (b) contacting *T. gondii* with the inhibitor.